

Claims

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1. A method of supplying nutritional supplementation to mammals comprising:  
providing an aqueous solution of at least one lactic acid salt; and  
administering said solution in oral dosage form to a mammalian host in an amount sufficient to affect the mammal's fluid, electrolyte or carbohydrate balance during exercise and/or subsequent recovery.

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2. The method as recited in claim 1, wherein (the base forming) the lactic acid salt is inorganic.)

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3. The method as recited in claim 2, wherein the inorganic lactic acid salt is at least one member selected from the group consisting of ammonium lactate, calcium lactate, potassium lactate, sodium lactate and magnesium lactate.

4. The method as recited in claim 1, wherein the base forming the lactic acid salt is organic.

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5. The method as recited in claim 4, wherein the organic lactic acid salt comprises L(+)-lactic acid and at least one (member selected from the group consisting of) L isomeric forms of basic amino acids.

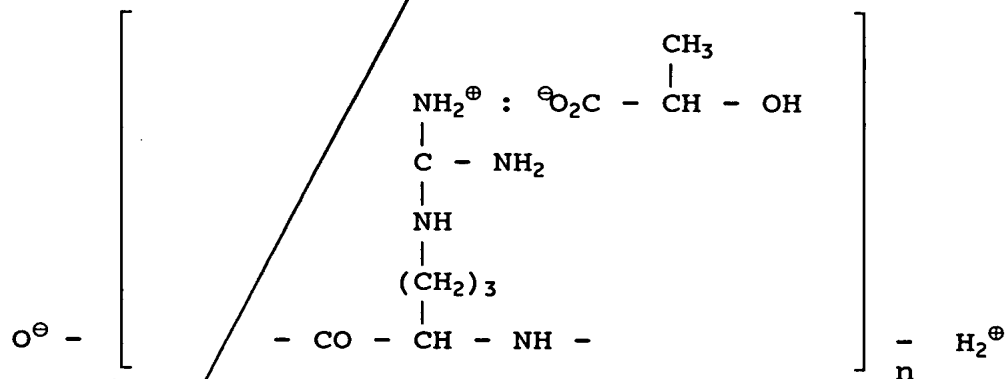
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6. The method as recited in claim 5, wherein the basic amino acid is at least one member selected from the group consisting of L-Arginine, L-Histidine and L-Lysine.

7. The method as recited in claim 6, wherein the organic lactic acid salt comprises L-Arginyl-L(+)-lactate.

8. The method as recited in claim 4, wherein the organic lactic acid salt is a polymer.

9. The method as recited in claim 8, wherein the organic lactic acid salt comprises poly(L-Arginyl-L(+)-lactate) having the following general structure:



where  $n \geq 1$ .

10. The method as recited in claim 1, wherein the aqueous solution further comprises a mixture of inorganic and organic lactic acid salts.

11. The method as recited in claim 1, wherein the aqueous solution further comprises simple or complex carbohydrates in amounts sufficient to improve the energy supply of the mammal.

12. The method as recited in claim 11, wherein the simple carbohydrate is glucose or fructose.

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13. The method as recited in claim 11, wherein the complex carbohydrate is at least one member selected from the group consisting of glucose polymers of from five to ten monomeric units.

5 *Sub A3*  
14. A nutritional supplement for restoring a mammal's fluid, electrolyte and carbohydrate balance during exercise and subsequent recovery comprising:  
10 an aqueous solution of at least one organic lactic acid salt in an amount sufficient to affect a mammal's fluid, electrolyte or carbohydrate balance during exercise and/or subsequent recovery.

15 15. The supplement as recited in claim 14, further comprising at least one inorganic lactic acid salt in an amount sufficient to affect a mammal's fluid, electrolyte or carbohydrate balance during exercise and/or subsequent recovery.

20 16. The supplement as recited in claim 15, wherein the lactic acid components are in accordance with the following dosages:

a) inorganic lactic acid salts in a final concentration of up to approximately 0.2 weight percent; and

25 b) organic lactic acid salts in a final concentration of from approximately 0.36 to 9.8 weight percent.

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17. The supplement as recited in claim 15, wherein the inorganic lactic acid salt is at least one member selected from the group consisting of ammonium lactate, calcium lactate, potassium lactate, sodium lactate and magnesium lactate.

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18. The supplement as recited in claim 14, wherein the organic lactic acid salt comprises L(+)-lactic acid and at least one member selected from the group consisting of L isomeric forms of basic amino acids.

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19. The supplement as recited in claim 18, wherein the basic amino acid is at least one member selected from the group consisting of L-Arginine, L-Histidine and L-Lysine.

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20. The supplement as recited in claim 19, wherein the organic lactic acid salt comprises L-Arginyl-L(+)-lactate.

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21. The supplement as recited in claim 14, wherein the organic lactic acid salt is a polymer.

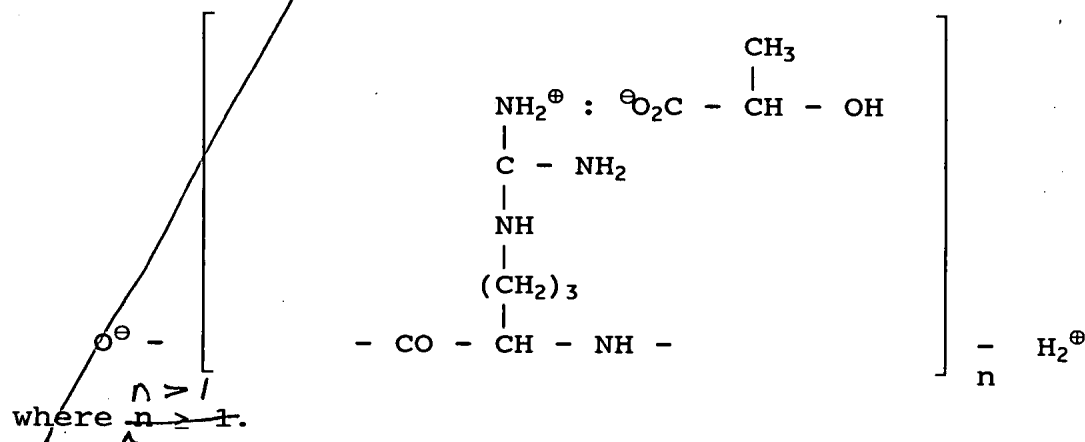
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22. The supplement as recited in claim 21, wherein the organic lactic acid salt comprises poly(L-Arginyl-L(+)-lactate) having the following general structure:

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cont

23. The supplement as recited in claim 14, wherein the aqueous solution further comprises simple or complex carbohydrates in amounts sufficient to improve the energy supply of the mammal.

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24. The supplement as recited in claim 23, wherein the simple carbohydrate is glucose or fructose.

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25. The supplement as recited in claim 23, wherein the complex carbohydrate is at least one member selected from the group consisting of glucose polymers of from five to ten monomeric units.

26. The supplement as recited in claim 23, wherein the simple or complex carbohydrate components are in accordance with the following dosages:

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c) Mono- and Disaccharide simple carbohydrates in a final concentration of from approximately 0.4 to 2.0 weight percent; and

d) Polysaccharide complex carbohydrates in a final concentration of from approximately 0.8 to 4.0 weight percent.

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27. A nutritional supplement for restoring a mammal's fluid, electrolyte and carbohydrate balance during exercise and subsequent recovery comprising an aqueous solution of a mixture of

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a) at least one inorganic lactic acid salt wherein the inorganic lactic acid salts are in a final solution concentration of up to approximately 0.2 weight percent; and

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b) at least one organic lactic acid salt, wherein the organic lactic acid salts are in a final solution concentration of from approximately 0.36 to 9.8 weight percent.

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